

STRANGE FIRE ON THE EARTH

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It is well known that, as well as Scriptural accounts such as that of Sodom and Gomorrah, there are legends in many parts of the world about great destruction by fire. It is not so well known that in many places there are marks, both on artifacts and on the face of the earth itself, of violent conflagration. Some of these stories and pieces of evidence are collected here, in what, it is hoped, will be the beginning of the investigation and eventual understanding of these fires in past times.

I. Introduction

It is "fantastically and incredibly possible" that atomic chain reactions boiled on the earth in the distant past. The evidence of a prehistoric spontaneous nuclear reaction was found by French researchers at the Oklo mine, Pierrelatte, in Gabon, Africa. As evidence the scientists noted that the ore of this mine contained abnormally low proportions of U_{235} such as are found only in depleted uranium fuel taken from atomic reactors. The ore also contains four rare elements in forms similar to those found in depleted uranium.

No one knows what combination of conditions produced the atomic reaction long before the feat was duplicated in the early 1940's in America. The same reaction may well have occurred in other parts of the earth. The physical effects of these possible reactions on the earth can only be guessed at.¹

But this strange story is not the only report of events in the past which involved intense blasts of heat in various parts of the world. Stones and sand melted into glass in desert regions. Hill forts show vitrified portions of the stone walls. Evidence of intense heat, far beyond the burning of a city in some ancient sites, raises important questions about the earth so often assumed as serene and predictable.

This is not an account of volcanoes and lava flows, of lightning, of the destroying fire of the invader, of accidental fire, nor even of jars of olive oil set on fire. There is evidence not yet pieced together of other strange fires. If a pattern can be derived from examination of accounts of intensive heat, it may be possible some day to apply the pattern to a clearer understanding and chronology of the ancient world. The known world of today is not the same as the ancient earth in some important respects.

II. Evidence from Desert, Hilltop, and City

A. Melting in the Desert

In the *Iliad*, Homer related that the goddess of the moon was warned not to battle with Mars but to leave the task to the Earth. But the goddess became involved in battle, was smote on the breast and her heart melted.² It is startling to read in 1973 in an article by Asimov that the surface of the moon was once heated quite strongly causing low-melting compounds to boil off, leaving high-melting compounds. This explanation is offered to explain the large proportion of glassy materials on the moon as the surface melted and solidified again. The evidence seems to be moon-wide. Asimov suggested that despite the surrounding atmos-

phere, there might be evidence of the same heat period on earth, too. He admitted that none has been found, and that that may be because the heat occurred in the first billion years of moon history.³

Can it be possible that Homer told of eye-witness accounts, that men on earth saw the fiery event happen on the moon? There is no reason other than conjecture to take presently adopted moon chronology seriously. Contrary to Asimov's opinion, there is a great deal of evidence lying about on the earth of unusual blasts of heat, besides a large number of literary references to such a phenomenon.

It goes more than a little "against the grain" to picture a large lake and at least three great rivers flowing from west to east across the whole width of the Arabian peninsula. Farther to the south are ancient ruins which date back to the time when the land was fruitful, and was copiously watered and there was luxuriant forest. A total of 28 fields of burned and broken stones, called harras, has been found in western Arabia, covering up to 7000 square miles each. The stones are densely packed, sharp-edged, and scorched black. They cannot be volcanic in origin. The stones fell from the sky and must be associated with the time when fertile land burned into instant desert.⁴ The important role of Arabia in prehistory is only beginning to emerge.

A blast of heat and other catastrophic events created the Sahara, which before that time evidently was a tropical region with heavy rainfall, large rivers, and abundant vegetation. In extensive parts of the desert, once cultivated soils are overlain by a thin cover of sand. Recently scientists have become aware that there is a vast reservoir of water below the Sahara, the only source of which could have been the heavy rains from the time before disaster struck.⁵

Further study is needed on just how recently the vast areas of North Africa, Egypt, Arabia, and other regions became deserts.⁶

In the Euphrates valley of southern Iraq, exploratory digging was done in 1947. Beneath the many cultural levels covering many centuries even before the time of Sumer was a floor of fused glass. It was similar to nothing else except the desert floor in New Mexico after the atomic blasts. Intensive heat melted the rock and sand into glass.⁷

In the interior of Africa, engineer Albion W. Hart, traversed a great desert area. At one place he came upon a large expanse of greenish glass which covered the sands as far as he could see. Later he recognized the same type of silica fusion at White Sands after the first atomic explosion there.⁸

The surface of the Gobi desert near Lob Nor Lake is covered with vitreous sand which is the result of atomic tests conducted by China. But the desert has

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certain other areas of similar glassy sand which have been present for thousands of years. The source of the intense heat is unknown. Similar sites are reported in Iraq.^{9, 10}

In the Mohave Desert there are huge circular or polygonal places which are covered by a hard substance like opaque glass.¹¹

B. Forts and Tombs

In many locations in Scotland, Ireland, and England towers bearing undoubted marks of uncommon fire have been found. The stonework has become calcined from the action of great heat. The portions above ground show this evidence. Lightning could not have been the cause.¹²

Other writers have reported that something in the past melted in streaks the stones of forts on the tops of hills in Brittany and Bohemia. Again strange vitrified walls can be observed.¹³

Hill forts of the west Atlantic coast fringe, from the Lofoten Islands off northern Norway to the Canary Islands off northwest Africa, became so-called fused forts, and the piled boulders of their circular walls have been turned to glass like frozen treacle on the outer portions of the wall facing the west. Some intense heat created the same effect on the inner sides of the eastern part of the circle. Similar vitrifications have been reported from the Western Pacific.¹⁴

The same phenomenon has been observed in the mounds and barrows of the British Isles. Some have at one time been filled with an intense heat. The stones of the innermost cell of a long barrow near Maughold on the Isle of Man have been fused together like the mysterious vitrified towers of Scotland and elsewhere. The memory of this historic event has been passed down in legends, as shown by an incident in *Beowulf*, where the dragon, enraged by the theft of treasure from its lair, attacked the king's castle and with the heat of its breath melted the stones until they stuck together in one lump. Many myths of many lands identify the dragon with astronomical phenomena. The vitrified stones are there. The legend needs decoding.¹⁵

Philo wrote of a stream of heaven-sent fire which overran great regions of the inhabited earth. Prometheus was chained to a rock for bringing fire to man. It is interesting to note that Augustine said that Prometheus lived at the time of Moses. In the tomb of Antefoker, vizier of Sesostris I, Pharaoh of the Middle Kingdom, a puzzling mystery was reported. A fire, clearly deliberate, raged in the tomb, as noted in many others in Egypt. The combustible material was abundant and of a light nature. The fierce fire left no trace of blackening except at the lowest levels of the tomb.¹⁶

According to Egyptian myths of the Old Kingdom the first dynasty was brought to an end by the erratic action (war) of planets. It is a fact that nearly all the royal monuments of this dynasty were obliterated by fire. Manetho wrote of many portents and a very great calamity at this time in Egyptian history. There was stability for a time during the second dynasty. Then a sudden change in the object of worship occurred which might have indicated new terror from the sky. Again bad fire damage occurred during the second

dynasty. The terror of fire from heaven might be reflected in the exceptional use of red in the inscriptions of the third dynasty.¹⁷

There are enigmatic signs of fire in the graves of both the Old and Middle Kingdoms of Egypt. Some kind of volatile substance penetrated the tombs and burned.¹⁸

Claude Schaeffer has identified six separate upheavals of earthquake and fire which had profound effects on the ancient world, including Asia Minor, Mesopotamia, Caucasus, Iranian plateau, Syria, Palestine, Cyprus, and Egypt. Some of these events closed great ages. The most ancient upheaval identified occurred between 2400-2300 B.C. and ended the Old Bronze Age. The end of the Middle Kingdom was marked by volcanic eruptions. At an early date lava flows on the Sinai Peninsula burned down forests leaving desert behind. In Palestine lava erupted filling the Jezreel Valley. Early in the 20th century a Phoenician vase was found embedded in the lava. The vase was dated approximately 1500 B.C.¹⁹

C. Cities

Catal Huyuk in south-central Turkey is believed to be one of the oldest cities in the world. According to first known evidences it was fully civilized and died suddenly just as mysteriously many centuries later. Excavators have reported a strange phenomenon at one of the levels, labelled VIa. Thick layers of burnt brick fused together by tremendous heat of a fire were found. The terrific heat penetrated to a depth of about a meter or more below the level of the floors, carbonizing the earth, the bones of the dead, and burial gifts. The scorching heat arrested all bacterial decay.²⁰

Excavation of a large ziggurat in Babylonia resulted in a puzzling observation. It appeared that fire had struck the tower and split it down to the very foundation. In different parts of the ruins immense brown and black masses of brickwork had changed into a vitrified state. At a distance the ruins looked like edifices torn apart at the foundations. Evidently the fiercest kind of fire created the havoc. The most curious of the fragments found was several misshapen masses of brickwork, black, subjected to some kind of fierce heat, and completely molten.

The whole ruin has the appearance of a burnt mountain. On one side of it, beneath the crowning masonry, lay huge fragments torn from the pile itself. The calcined and vitreous surface of the bricks had fused into rock-like masses. It is difficult to explain the cause of the vitrification of the upper building. Great boulders were vitrified, and brickwork had been fused by fire.²¹

Woolley studied a north Syrian site called Alalakh (now Atchana). The royal buildings burned so thoroughly that even in the core of the thick walls the mud-bricks were bright red and crumbling. The wall plaster, a mixture of mud and lime, had been vitrified and the basalt wall-slabs were in some places actually melted. At another site in Mesopotamia, Birs Nimroud, the vitrification is almost 20 feet deep.^{22, 23}

Farther to the east in India, between the Ganges and the mountains of Rajmahal, charred ruins were found which could not be due to some ordinary fire.

Several huge masses of stone were fused and hollowed. Similar ruined buildings have been discovered in the heart of the Indian forests by other travellers. Walls were like thick slabs of crystal, holed, split, and corroded by agents unknown. An internal courtyard had a very odd, half-vitrified floor.²⁴

An Early Bronze Age settlement was discovered recently on the Greek island of Samos, mentioned in Acts 20:15. The site was destroyed by a terrible fire and never repopulated. The all-consuming fire reduced most bricks to a reddish mass. Only a few remotely resembled the original shape.²⁵

When the island of Thera exploded some centuries later with at least four times the fury of Krakotoa in the nineteenth century, it was noted that the burning of cities occurred from gas and vapors.²⁶

At Pylos, the palace was destroyed in a holocaust, which even melted gold ornaments into lumps and drops. The devastating fire melted brick and stone into a solid mass as hard as rock. Pots were made into a molten vitrified layer over whole floors. Stones melted and disintegrated or burned into lime.²⁷

An enigmatic tale from an even more enigmatic adventurer, William Walker, needs evaluation. While exploring Death Valley in 1850, Walker reported the ruins of a mile-long settlement. At the center on rock 20-30 feet high, he found the remains of a large building. The south end of the building and supporting stones had melted and vitrified. The area is now sterile desert. According to Walker, the whole region between the rivers Gila and St. John was covered with ruins. Remains of settlements are very extensive and they are burnt out and vitrified in part, full of fused stones and craters caused by fires which were hot enough to liquify any rock or metal. Paving stones and houses were torn with monstrous cracks which seem to have been attacked by a giant's fire-plough.^{28, 29}

Near the old Inca capital city of Cusco is Sacsayhuaman, or Falcon Rock. Here granite blocks are found which show signs of vitrification from tremendous high temperatures.³⁰

In Brazil is the site of Sete Cidades (Seven Cities), first described in 1928. The formation is in the Province of Piaui, near the equator. The site is a monstrous chaos as one might imagine Gomorrah was. The stones are dried out, destroyed, melted. A great fire raged there. No excavation has been conducted yet. There is no geological explanation of the surrounding plain which has the appearance of an infinite number of tortoise backs. These may also have been the result of great heat.³¹

III. Observers and Explainers

All the known physical evidence for strange fires in the past have been listed. Undoubtedly much more still exists on the earth, and still more are remarked upon in obscure books and journals. When there is no acceptable explanation for a phenomenon, it tends to be set aside and forgotten.

No doubt there are conventional explanations for some of the evidence given. In other cases the evidence may be in error and should be corrected. Still, enough evidences of strange fires remain to require some attempts at explanation. Therefore, in this sec-

tion, two kinds of observation and attempted explanation are considered: myth and ancient history, and scientific theory.

It is very difficult, if possible at all, to separate myth from history regarding ancient events. And, up to this point in time, those promulgating theory have been selective by choosing only those events which can be placed far back into geological time. Somehow it is more reassuring to place an event millions of years in the past than to place it 2700 or 3500 years ago. Fused glass in a desert is given scientific attention; fused stone in an ancient fort or city, only stony silence.

A. Myth and History

Only a few years ago it would not have been prudent to list myth alongside of history. In recent years, however, more and more scholars have come to realize that a good deal of myth may well be coded history. As one relatively modern example, it is more than a little startling to discover the amount of English history that has been coded into familiar Mother Goose Rhymes. Parents pass the rhymes on to children with no awareness of their historical content, much as myths may be passed on from generation to generation with the original meaning long forgotten.³²

From all over the world come myths, legends, history, and other literary references to strange fire on the earth. Many of these, from widely separated places, must be relevant to the same events.

The Sun: The Greeks, Carians, and others who lived on the Aegean Sea shores referred to the time when the sun was driven off its course and disappeared for an entire day. The earth burned and drowned. Ovid described the horror vividly. The earth burst into flame, moisture all dried up, meadows burned to white ashes, trees were consumed, and whole nations were reduced to ashes. Mounts Aetna and Parnassus were blazing, the Caucasus in the land of the Scythians burned as did the Alps and the cloud-capped Apennines.

Libya became a desert, the waters of the Don steamed, the Euphrates burned, and the great rivers of the Ganges, Phasis, Danube, and Alpheus boiled, the sands of Tagus melted from the heat. Even the streams of the Nile were empty and filled with dust for a time, as were the Thracian river, Hebrus, Strymon, Rhine, Rhone, Po, and Tiber. Great cracks yawned everywhere. In places the sea shrank and became a dry plain of sand. There was a world conflagration, blazing volcanoes, boiling rivers, disappearance of seas, the birth of deserts.³³

At the time the earth stood still, mountains fell and others rose from level ground. The earth was heated and the ocean boiled in many places. Rock liquefied, volcanoes ignited, and forests burned.³⁴

Apollo, son of Zeus, and his chariot took over many of the attributes of an older sun god, Helios, who had a son named Phaethon. The boy asked his father to let him drive the sun chariot for a day. The father was aghast, but he had given his word. Phaethon was incapable of managing the horses and came off the proper path, resulting in unbelievable confusion in the heavens. The horses bolted, first soaring so high that the earth shivered and the North

Star glowed with heat. Then the horses plunged down so close to earth that the grass caught fire, the rivers boiled. No constellation remained in place, and the Earth was terribly scorched, which then cried to Jupiter to act. Zeus intervened and hurled a thunderbolt at Phaethon.

Ovid quoted Solon who maintained that Phaethon was not a fable, but a deviation of the bodies that revolve in the heavens, and that a destruction, at long intervals, occurred of things on the earth from a great conflagration. This myth, which goes back to Sumerian times, appears to be a clear statement about regions of the earth which had been scorched as a result of the passage near the earth of astral bodies.^{35, 36}

Planets and Comets: There is a legend that the great pyramid was built to memorialize a terrible destruction within the planetary system which affected the earth with fire and flooding. The world was turned upside down and stars fell from the sky.³⁷

Ovid tells of world ages and of a certain time after the great flood when both sea and land, and even heaven, should feel the force of Vulcan's scorching brand to the extent that the world would be wrecked.³⁸

In an ancient tale from Egypt called *The Shipwrecked Sailor* a star fell which produced flames and people burned up.³⁹

According to the Edda myth the world came apart, and there was a battle in the sky among the planets. There were all-engulfing flames and destructive fire in the world. The apparent cause was the erratic behavior of Mars. Chaldeans, Greeks, and Chinese all attributed the element of fire to the planet Mars.^{40, 41}

The author of the *Aeneid* reported a stream of fiery light in heaven, and a flaming torrent that went down in spirals. Somehow Mars was associated with the destruction.⁴²

In the *Iliad*, Venus uttered her loud cry, and over against her sprouted Mars, dread as a dark whirlwind. All the roots of many-founted Ida were shaken and all her peaks. They rushed with surging flood, and the fair streams seethed and boiled.⁴³

Manilius stated that the world took fire, and new stars were kindled as a bright remembrance of the event.⁴⁴

The Druids said that due to the universal wickedness of man, the great God, by means of a violent wind, sent a virulent poison on the earth. Death was inhaled with every breath. The poisonous wind was succeeded by a tempest of fire, which rent the earth asunder.⁴⁵

In the Epic of Gilgamesh, Enkidu died because he was smitten by the poisonous breath of the heavenly beast. Something in the sky produced tremendous heat.⁴⁶

Donnelly referred to a myth about the world in flames and people who felt a comet strike the earth.⁴⁷

Chinese legends contain mention of aerial battles, blinding rays and poison gases, dragons of fire, spheres of flame, shining darts and lightning. The legends appear in the dragon symbol with eyes flaming and jaws of fire. The beasts roar among the sky winds and plunge into ocean depths, reducing whole cities to ashes from their burning breath.⁴⁸

According to an Amazonian source a snake spurted

flame and burnt up the forests, charring land and making rivers boil.⁴⁹

Rain of Fire: The Ipuwer papyrus includes a tale of horror that there was a downpour of bitumen and sticky substance. There was the great din of fire above the heads of the people. Gates, columns, and walls were consumed by fire.⁵⁰

In the Midrashim, commentary on the Hebrew Scriptures, God poured out naphtha over the people, and burning blains.⁵¹

Among the Voguls of Siberia it is related that God sent a sea of fire upon the earth. Fire raged for seven winters and summers which burned up the earth.⁵²

Motifs in Irish myth include a world-fire which occurred centuries after the flood. It was a conflagration that destroyed the earth, and the flame of fire from heaven was swifter than a blast of wind.⁵³

According to the Aztec codex, Chimalpopoca, there was a rain of fire, and all who existed were burned. The fire burned with a great tumult and men were lost and destroyed in a rain of fire. The sun was on fire, and everything together with the houses was consumed. In an Aztec prayer: "Make an end of this smoke and fog of thy resentment. Quench also the burning and destroying fire of thine anger." And in a Mayan document, called the Chilam Balaam, a fiery rain fell, ashes fell, and rocks and trees fell down.⁵⁴

Heat and Melting: Many sources among the myths of people around the world describe meltings of the surface of the earth and boiling of the sea in places from intense heat.⁵⁵

Etruscan annals, according to Varro, included traditions of the combustion of the world at various times, each of which ended a world age.⁵⁶

Philo of Alexandria, 20 B.C.-54 A.D., noted repeated destructions of the earth by water and fire as the reason that later generations did not receive from the former the memory of the order and sequence of events.⁵⁷

There is a lively account in a Chinese manuscript of how the earth was struck during the reign of Emperor Yao by a terrible calamity. Intense heat lit up the earth, harvests were destroyed, and the seas boiled.⁵⁸

And in a Hawaiian myth there was chaos from the burnt-out world, the wreck and ruin of an earlier world.⁵⁹

B. Theory and Conjecture

If the strange fires really occurred as observed and described, a number of catastrophic actions took place in historic times. For more than a century, hardly a word in the English language evoked more ire and fire than the word "catastrophe" among both geologists and archaeologists. The reason of course is obvious. Every catastrophe in nature is also a catastrophe for meticulously constructed geological and archaeological time scales.

It is refreshing in the face of this to note that in 1963 at the meeting of the American Geological Society, many geologists advised the rehabilitation of catastrophism. In 1968 the reputable archaeologist Carpenter was willing to speak of drastic changes in very recent times.⁶⁰ The pioneering works of two

theorists of catastrophism in the twentieth century, George M. Price and Immanuel Velikovsky, may yet become respectable.

Meteorites: Meteorites of gigantic size might have struck the sea. In fact the odds greatly favor a seafall over a landfall. The results would be most devastating. Large meteorites did fall on the earth in historic times, including the craters at Waber in Arabia. Asteroids are a hazard to the earth.⁶¹ Among the actual and possible giant meteorites were the blast in 1908 northeast of Lake Baikal in Siberia and perhaps Crater Lake in Colorado.⁶² Chubb crater was discovered in northern Labrador in 1950. The crater covers an area of four square miles, and is believed to represent the fall of a small asteroid. By comparison the large crater in Arizona is only $\frac{1}{4}$ th mile in diameter.

Recent finds of large craters have been noted in Australia, Arabia, Mexico, besides the half-million oval craters along the Atlantic coast, especially in the Carolinas. These strange elliptical depressions (called bays locally) are scattered thickly over the Carolina coast and more sparsely along the entire Atlantic coastal plain from southern New Jersey to northeast Florida. The larger bays average from 2200 to 8000 feet long, and they are oriented in a remarkable parallelism. The long axis of each runs from the northwest to the southeast. The rims of earth invariably are elevated at the southeastern end.

Uncounted numbers of the meteorites may have fallen into the ocean. It is worth noting also that a large number of meteorites have been found in the southern Appalachian region.⁶³ The enormous number of meteors probably grazed the Blue Ridge Mountains and hit the earth at about 150,000 miles per hour. They must have devastated 100,000 square miles with resulting heat and explosions.⁶⁴ Similar lakes or bays have now been found in the Alaskan tundra.⁶⁵

Although the topic is controversial, some authorities are willing to grant that the earth was bombarded many times in the past by huge astral bodies. (Incidentally, the surfaces of the moon and Mars are very similar to the surface of the earth, except for the effects of sedimentation, volcanism and weathering.) Thus far more than 70 large depressions on the earth are believed to be old craters formed by meteorites. These have been reported as definite or possible in such locations as the Michigan basin; Hudson's Bay; Wells Creek Basin, Tennessee; the Vredefort Dome in South Africa, and many other places. The Ries Kessel (giant kettle) in Bavaria is 17 miles in diameter. In 1961 Dr. R. S. Dietz termed such enormous "fossil" craters "astroblemes" (star wounds).⁶⁶

In 1965 a group of geologists from Columbia University reported evidence that a great cosmic body crashed into the earth at Campo del Cielo (Field of Heaven) in Argentina. There was no clue as to the nature of the cosmic body. It may have been an earth satellite. Incredibly they reported that the body may have been as large as the moon.⁶⁷

As long as catastrophes are placed safely back far enough in time, Dr. Harold Urey, an implacable foe of recent catastrophes, has come out in favor of repeated comet-earth collisions, in order to explain such phenomena as tektites, catastrophic breaks between

geological periods, sudden great climatic changes, seismic effects, enormous lava flows, oceans sweeping over the land, dinosaur destruction, and the initiation of the Tertiary division of time.⁶⁸

Petroleum: W. F. Libby of C14 fame has suggested that oil is raining on the planet Jupiter. And Oro and Han have maintained that petroleum is now being formed on Jupiter. A deep layer of tar is postulated on Titan, a satellite of Saturn, and L. P. Gaucher has argued that many rains of oil occurred early in earth history. It is strange and sobering to note that rains of petroleum on the earth, sometimes burning, are described most vividly in many myths.⁶⁹

Earth Wobble: The theory has been proposed that the earth wobbles on its axis causing magnetic field reversals. And supposedly because of such a catastrophic event more cosmic radiation struck the earth, killing off whole species of plants and animals.

Two British physicists believe that giant comets struck the earth. As the comet head or nucleus struck the earth, tons of molten rock were hurled thousands of miles into the atmosphere, falling and hardening in tektite-like patterns. At the same time gases, frozen ammonia and methane, spread through the atmosphere and water, drastically changing the environment. In a swirling finale, lightning ignited the deadly mixture of methane and air causing vast spreading explosions. Again the theory entails possible events far back in the past. The tektite falls are believed to correlate with the magnetic reversals.⁷⁰

Supernova: In *Nature*, 1971, an author suggested that supernova might have come close to the Solar System. The exploding supernova created catastrophe on the earth by radiation or by disastrous effects on the climate.⁷¹

Glaciation: While glaciation is not explained, it is believed by some to be the cause of worldwide cataclysm. As the ice increased the ocean level was lowered to the point where the sea bed no longer counterbalanced the land. Supposedly, the earth ruptured and lava and water seethed in a boiling cauldron, and vapor and dust surrounded the earth. With little sunlight and the hot earth, much animal and plant life became extinct. Presumably, life still on the earth descended from the survivors.⁷²

Mars: If Mars once approached the earth, enormous tides, volcanic eruptions, and earthquakes would have resulted. Interplanetary charges might have fried entire ancient cities. Some hint is given of the possibility of such a catastrophe by the fact that storms observed on Mars are at their greatest when Mars is closest to earth each 15 years.⁷³

Moon: In 1968 Astronomer Munk suggested that some time in the past the moon may have come close to the earth. The resulting tides would have been most destructive. The tides would have formed bores that surged across continents. The heat from the friction would have evaporated huge quantities of water.⁷⁴

Goldreich in 1972 assumed the same theory, including tides several kilometers high. Friction would have caused so much heat as to evaporate much of the water and even melt some of the crust in an enormous catastrophe.⁷⁵

Intense application of heat in a short time could have created the mysterious evaporites: great beds of salt, gypsum; and anhydrite beds.⁷⁶

IV. The Hebrew Bible

Because of the physical evidence on the earth, history and myths that are so persistent about strange fires and fires from heaven, it may be instructive to examine scriptural references to fire. Such references may be tied to other events noted around the world.

In Genesis 19:24-25: "Then the Lord rained on Sodom and Gomorrah brimstone and fire from the Lord out of heaven; and he overthrew those cities, and all the inhabitants of the cities, and what grew on the ground." Anyone visiting the area where those cities once flourished supposedly would be greatly struck by the biblical description that it was well watered everywhere, as the garden of the Lord.

After study of the area, Kyle assumed that salt was mixed with the descending fiery rain. A stratum of rock salt lies along the western lower end of the Dead Sea and forms the base of a conical mountain called Jebel Usdum today. Usdum, of course, is Sodom. The stratum of salt is 150 feet thick and there may be more of the stratum underground. It is almost absolutely pure rock salt. Overlying this formation is marl filled with free sulphur in a very pure state. The area is a burned-out region of oil and asphalt. The slime pits of old are still evidenced by the asphalt found at the lower end of the sea.

Kyle has proposed that this catastrophe should be treated as an actual historical event as a result of the direct action of God in 29 passages in 15 books of the Bible plus other possible indirect references.⁷⁷ Various earth strata have been found welded together as though by intense heat.⁷⁸

In Moab Israel joined himself unto Baalpeor: and the anger of the Lord was kindled against Israel. Numbers 25:3 Baalpeor, it is suggested, is the god or lord of fire. Mendenhall noted that there is no satisfactory Semitic etymology for the word Peor, but the meaning now seems clear. Peor is the Hittite word for fire. It is the base of the Greek word, Pyr, meaning fire, and of course the English word fire. In the Middle East in ancient times there was an amazing number of literary references to a garment of flame, the goatskin dyed red, or a ramskin dyed red, or a red-dyed goat. The meaning is completely obscure.⁷⁹

The ancients worshipped what they most feared and dreaded. Human sacrifices were made to appease the angry gods. If indeed dreadful fires came down from the sky on a number of occasions, it would be entirely plausible that worship of fire or Peor would commence in a desperate attempt for survival. Both the word Peor and the goatskin dyed red may allude to the fiery times.*

There are a great many references in the Hebrew Bible to such events as quakes, mountains moved and shaken, hills melted like wax, mountains smoking, and

skipping like rams. According to Gaenssle, these are "highly poetical texts" and they should not be taken literally.⁸⁰ This view must be considered especially since it is very commonly held by students of the Scriptures. It seems reasonable to ask, however, how the wording would differ if indeed actual events observed by eye-witnesses were being described? Consider the impact of a series of passages from the RSV Edition, given without immediate comment.

Exodus 9:23-4 . . . and the Lord sent thunder and hail, and fire ran down to the earth. . . . There was hail, and fire flashing continually in the midst of the hail. . . .

Numbers 21:28 For fire went forth from Heshbon, flame from the city of Sihon. It devoured Ar of Moab, the lords of the heights of the Arnon.

Deuteronomy 29:23 . . . the whole land brimstone and salt, and a burnt-out waste, unsown, and growing nothing, where no grass can sprout, an overthrow like that of Sodom and Gomorrah, Admah and Zeboiim, which the Lord overthrew in his anger and wrath.

Deuteronomy 32:22 For a fire is kindled by my anger, and it burns to the depths of Sheol, devours the earth and its increase, and sets on fire the foundations of the mountains.

2 Samuel 22:8-9, 16 Then the earth reeled and rocked; the foundations of the heavens trembled and quaked, because he was angry. Smoke went up from his nostrils, and devouring fire from his mouth; glowing coals flamed forth from him. . . . Then the channels of the sea were seen, the foundations of the world were laid bare, at the rebuke of the Lord, at the blast of the breath of his nostrils.

Job 1:16 . . . The fire of God fell from heaven and burned up the sheep and the servants, and consumed them; and I alone have escaped to tell you.

Job 18:15 . . . brimstone is scattered upon his habitation.

Psalm 11:6 On the wicked he will rain coals of fire and brimstone; a scorching wind shall be the portion of their cup.

Psalm 104:32 (The Lord) looks on the earth and it trembles, (He) touches the mountains and they smoke.

Psalm 21:9 You will make them as a blazing oven when you appear. The Lord will swallow them up in his wrath; and fire will consume them.

Psalm 29:5-9 The voice of the Lord breaks the cedars, the Lord breaks the cedars of Lebanon. He makes Lebanon to skip like a calf, and Sirion like a young wild ox. The voice of the Lord flashes forth flames of fire. The voice of the Lord shakes the wilderness, the Lord shakes the wilderness of Kadesh. The voice of the Lord makes the oaks to whirl, and strips the forests bare.

Psalm 50:3 Our God comes, he does not keep silence, before him is a devouring fire, round about him a mighty tempest.

Psalm 97:3-7 Fire goes before him, and burns up his adversaries round about. His lightnings lighten the world; the earth sees and trembles. The mountains melt like wax before the Lord, before the Lord of all the earth. . . . All worshipers of images are put to shame, who make their boast in worthless idols.

*Editor's note: Obviously references to ramskins dyed red as in Exodus 25:5 describe directions from God for construction of the sacred tabernacle, and would have no connection with pagan use of goat skins dyed red.

Psalm 148:7-8 Praise the Lord from the earth, you sea monsters and all deeps, fire and hail, snow and frost, stormy wind fulfilling his command.

Psalm 83:14-5 As fire consumes the forest, as the flame sets the mountains ablaze, so do thou pursue them with thy tempest and terrify them with thy hurricane.

Psalm 46:6 The nations rage, the kingdoms totter; he utters his voice, the earth melts.

Isaiah 29:5-6 (regarding the city of Ariel where David camped) . . . And in an instant, suddenly, you will be visited by the Lord of hosts with thunder and with earthquake and great noise, with whirlwind and tempest, and the flame of a devouring fire.

Isaiah 30:30 (Assyria) And the Lord will cause his majestic voice to be heard and the descending blow of his arm to be seen, in furious anger and a flame of devouring fire, with a cloudburst and tempest and hailstones.

Isaiah 66:15-16 For behold, the Lord will come in fire, and his chariots like the stormwind, to render his anger in fury, and his rebuke with flames of fire. For by fire will the Lord execute judgment. . . .

Isaiah 34:2-4 For the Lord is enraged against all the nations, and furious against all their host, he has doomed them, has given them over for slaughter. . . . All the host of heaven shall rot away, and the skies roll up like a scroll. All their host shall fall, as leaves fall from the vine, like leaves falling from the fig tree.

Jeremiah 4:4 (Judah) . . . lest my wrath go forth like fire, and burn with none to quench it, because of the evil of your doings.

Jeremiah 43:12-3 He shall kindle a fire in the temples of the gods of Egypt; and he shall burn them and carry them away captive; and he shall clean the land of Egypt, as a shepherd cleans his cloak of vermin; and he shall go away from there in peace. He shall break the obelisks of Heliopolis which is in the land of Egypt; and the temples of the gods of Egypt he shall burn with fire.

Jeremiah 48:45 . . . for a fire has gone forth from Heshbon, a flame from the house of Sihon;

Jeremiah 49:27 And I will kindle a fire in the wall of Damascus, and it shall devour the strongholds of Beulahad. . . .

Jeremiah 50:32 (Babylon) . . . I will kindle a fire in his cities, and it will devour all that is round about him.

Ezekiel 15:7-8 And I will set my face against them; though they escape from the fire, the fire shall yet consume them; and you will know that I am the Lord, when I set my face against them. And I will make the land desolate because they have acted faithlessly, says the Lord God. (Jerusalem)

Ezekiel 20:47 (against the forest land in the Negeb) . . . Behold, I will kindle a fire in you, and it shall devour every green tree in you and every dry tree; the blazing flame shall not be quenched, and all faces from south to north shall be scorched by it.

Ezekiel 38:22-3 (against Gog) With pestilence and bloodshed I will enter into judgment with him; and I will rain upon him and his hordes and the many

peoples that are with him, torrential rains and hailstones, fire and brimstone. So I will show my greatness and my holiness and make myself known in the eyes of many nations. Then they will know that I am the Lord.

Ezekiel 39:6 I will send fire on Magog and on those who dwell securely in the coastlands; and they shall know that I am the Lord.

Joel 1:19-20 For fire has devoured the pastures of the wilderness, and flame has burned all the trees of the field. Even the wild beasts cry to thee because the water brooks are dried up, and fire has devoured the pastures of the wilderness.

Amos 1:7, 10 So I will send a fire upon the wall of Gaza, and it shall devour her strongholds. . . . So I will send a fire upon the wall of Tyre, and it shall devour her strongholds. (Other similar judgments)

Amos 7:4 . . . the Lord God was calling for a judgment by fire, and it devoured the great deep and was eating up the land.

Amos 9:5 The Lord, God of hosts, he who touches the earth and it melts, and all who dwell in it mourn . . . who calls for the waters of the sea, and pours them out upon the surface of the earth—the Lord is his name.

Micah 1:4 And the mountains will melt under him and the valleys will be cleft, like wax before the fire, like waters poured down a steep place.

Nahum 1:3-5 . . . His way is in whirlwind and storm, and the clouds are the dust of his feet. He rebukes the sea and makes it dry, he dries up all the rivers; . . . the mountains quake before him, the hills melt; the earth is laid waste before him, the world and all that dwell therein.

Acts 19:35 Men of Ephesus, what man is there who does not know that the city of Ephesians is temple keeper of . . . the sacred stone that fell from the sky?

Revelation 16:8-9 The fourth angel poured his bowl on the sun, and it was allowed to scorch men with fire; men were scorched by the fierce heat, and they cursed the name of God who had power over these plagues, and they did not repent and give him glory.

V. A Closing Word

It is difficult to accept the idea of strange fires on the earth in the past, but it would be even more difficult to write off all the physical evidence, the literary evidence, and the testimony given in the Bible. In many cases fire did not occur in isolation. Other agents of destruction were active, as indicated so vividly in the descriptions. Yet it seems of value to collect in one place the references of all known reports of strange fires or the effects of unusual heat.

Time after time the earth is scarred. Slowly it heals again and man forgets, but some of the tell-tale evidence remains to arouse curiosity and wonder today.

On the one hand God has promised in Genesis 8:21-22,

I will never again curse the ground because of man, for the imagination of man's heart is evil from his youth; neither will I ever again destroy every living creature as I have done. While the

earth remains, seedtime and harvest, cold and heat, summer and winter, day and night, shall not cease.

Perhaps the focus of the promise should be on the words "every" and "cease"; and the promised blessings have not ceased up to the present day.

Yet God has brought strong rebukes and judgments upon many peoples of the earth since the time of Noah, as at Babel, in Sodom, in Egypt, and in many nations of the earth, named and unnamed. There have been terrible catastrophes since the flood, extinctions

since the flood, and strange fires on the earth since the flood. The extent to which God used natural phenomena, e.g., comets and planets, is not known; neither can one say to what extent He intervened directly on the earth in ways which will never be subject to scientific explanation. Both kinds of events ultimately are derived from the same Source.

This paper is a beginning of an investigation of unusual phenomena which should be followed by deeper study. Perhaps, some day, wiser heads will determine a precise chronology of such past events.

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